



## PATENT ABSTRACTS OF JAPAN

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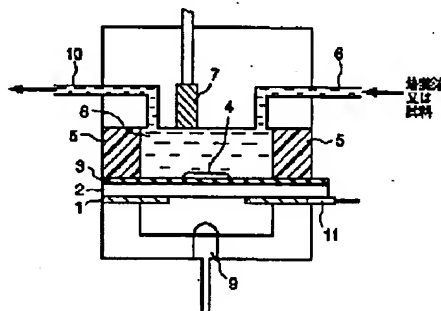
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(21) Application number: **11254432**(22) Date of filing: **08.09.99**(71) Applicant: **JAPAN ADVANCED INST OF  
SCIENCE & TECHNOLOGY  
HOKURIKU**(72) Inventor: **TAMIYA EIICHI****(54) BIOSENSOR FOR MEASURING INFLUENCE ON  
METABOLIC ACTIVITY OF CELL**change of the light electromotive force before and after  
adding the substance to be examined.**(57) Abstract:**

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**PROBLEM TO BE SOLVED:** To provide an apparatus for  
measuring metabolic activity of a cell.

**SOLUTION:** This biosensor is used for measuring  
influence of a substance to be examined on metabolic  
activity of a cell and the biosensor is equipped with a  
semiconductor layer 2, an insulating layer 3 laminated  
on a main face of the semiconductor 2, a live cell or a  
live cell group 4 which comes into contact with the  
insulating layer 3 and is arranged thereon, MIS  
structure comprising a culture solution layer 8 which  
immerses the live cell or the live cell group 4 and  
comes into contact with the insulating layer 3, a bias  
electrode means for applying bias voltage to the MIS  
structure, a light source means for irradiating  
controlled light to the MIS structure in order to  
generate light electromotive force in the MIS structure,  
a means for adding the substance to be examined to the  
culture solution layer 8 and a means for monitoring the  
change of light generated in the MIS structure, and the  
biosensor measures influence of the substance to be  
examined on metabolic activity of the cell from the



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